

REMARKS

Claims 1-19 are pending. Claims 1-17 and 19 have been amended, and claim 18 has been canceled in this response. No new claims have been added. Claims 1-17 and 19 therefore will be pending upon entry of the above amendments.

Claims 1, 2, 6-12, and 16-19 have been rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 6,196,871 (“the Szu patent”) in view of U.S. Patent No. 6,203,690 (“the Findeis patent”) and U.S. Patent No. 5,893,725 (“the Bhansali patent”). Claims 3-5 and 13-15 have been rejected under 35 U.S.C. §103(a) as being obvious over the Szu patent in view of U.S. Patent No. 5,086,966 (“the Melton patent”).

Claim 1 has been amended to recite, *inter alia*, an electronic assembly, comprising a printed circuit substrate including a retentive through hole, . . . and an electrical connector, the electrical connector comprising . . . a retentive structure extending from the surface of the housing . . . and positioned within the through hole, . . . the retentive structure having a cross-sectional area smaller than an area of the through hole so that a clearance exists between the retentive structure and a periphery of the through hole; wherein at least some of the plating material separates from the base material at a reflow temperature of the plurality of solder masses and combines with a solder composition within the through hole so that the solder composition and the plating material, upon cooling, form a bond between the printed circuit substrate and the retentive structure.

The Examiner has characterized the adjusting posts (18) of the Szu patent as a retentive structure as recited in claim 1 of the present application (*office action at pg. 2, line 17*). Each adjusting post (18) includes a leg (24) that is “firmly received” in a through hole (361) or (36) formed in a substrate (34), and fixes the connector (10) to the circuit board (34) (*the Szu patent at col. 3, lines 18-25 and 53-57*). The adjusting posts (18) therefore do not have a cross-sectional area smaller than an area of the through holes (361) or (36) so that a clearance exists between the adjusting posts (18) the periphery of the associated through holes (136) or (36) (*see also Figures 3B and 4B of the Szu patent*).

Applicants therefore respectfully submit that the Szu patent neither teaches nor suggests a retentive structure positioned within a through hole of a circuit substrate, the retentive structure having a cross-sectional area smaller than an area of the through hole so

that a clearance exists between the retentive structure and a periphery of the through hole, in contradistinction to amended claim 1 of the present application. The Findeis, Bhansali, and Melton patents likewise neither teach nor suggest these limitations.

Moreover, the Szu, Findeis, Bhansali, and Melton patents neither teach nor suggest that at least some of a plating material separates from a base material on a retentive structure at a reflow temperature of a plurality of solder masses and combines with a solder composition in a through hole so that the solder composition and the plating material, upon cooling, form a bond between a printed circuit substrate and the retentive structure, in contradistinction to amended claim 1.

Applicants therefore respectfully submit that amended claim 1 is patentably distinct from the Szu, Findeis, Bhansali, and Melton patents, alone or in combination. Withdrawal of the rejection of claim 1 (and claims 2-7 and 19, which depend therefrom) under 35 U.S.C. § 103(a) is respectfully requested.

Claim 8 has been amended to recite a retentive structure extending from the surface of the housing, . . . and positioned within the through hole, the retentive structure having a cross-sectional area smaller than an area of the through hole so that a clearance exists between the retentive structure and a periphery of the through hole, and being made with a material that combines with a solder composition within the through hole and enables continued affixation of the electrical connector to a circuit substrate at temperatures sufficient to initiate reflow of the plurality of solder masses.

Szu, Findeis, Bhansali, and Melton patents, as discussed above in relation to claim 1, neither teach or suggest a retentive structure positioned within a through hole of a circuit substrate, the retentive structure having a cross-sectional area smaller than an area of the through hole so that a clearance exists between the retentive structure and a periphery of the through hole.

Moreover, the Szu, Findeis, Bhansali, and Melton neither teach nor suggest a retentive structure being made with a material that combines with a solder composition in a through hole and enables continued affixation of an electrical connector to a circuit substrate at temperatures sufficient to initiate reflow of a plurality of solder masses.

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Applicants therefore respectfully submit that amended claim 8 is patentably distinct from the Szu, Findeis, Bhansali, and Melton patents, alone or in combination. Withdrawal of the rejection of claim 8 under 35 U.S.C. § 103(a) is respectfully requested.

Claim 9 has been amended to recite a retentive structure extending from a surface of the housing and being received by a through hole formed in the substrate . . . , the retentive structure made with a material that alters a physical property of a solder composition in contact with the retentive structure within the through hole at a reflow temperature of such a solder composition. Applicants respectfully submit that the Szu, Findeis, Bhansali, and Melton patents neither teach nor suggest these limitations. Withdrawal of the rejection of claim 9 (and claims 10-16, which depend therefrom) under 35 U.S.C. § 103(a) is respectfully requested.

Claim 17 has been amended to recite a retentive structure extending from the surface of the housing . . . and positioned within the through hole, the retentive structure comprising a material that combines with a solder composition within the through hole such that after initial affixation of the solder masses with the circuit substrate, affixation at the solder masses is compromised, due to an elevated temperature, prior to affixation at the retentive structure. Applicants respectfully submit that the Szu, Findeis, Bhansali, and Melton patents neither teach nor suggest these limitations. Withdrawal of the rejection of claim 17 under 35 U.S.C. § 103(a) is respectfully requested.

A notice of allowability is respectfully requested.

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